

### **REMARKS**

By this amendment, claims 1-16 are canceled and new claims 17-19 are added to place this application in condition for allowance. Currently, claims 17-19 are before the Examiner for consideration on their merits.

First, no new matter is introduced by the introduction of claims 17-19. To review, the claims are drafted to more clearly define the two steps of the inventive process, the first step being a purifying step using a first material comprising titanium, a titanium alloy, zirconium or a zirconium alloy. The second step is a deoxidizing step using a second titanium material wherein the second titanium material is immersed in the purified metal salt. In essence, the steps of claims 1 and 4 have been combined and presented as new claim 17. Claim 1 defined the purification step whereas claim 4 used the purified metal salt for a deoxidation step of a titanium material. New claim 18 parallel original claim 2 and new claim 19 parallels claim 3 so no new matter is added.

Turning now to the rejection, claim 1 was rejected based on United States Patent No. 6,309,595 to Rosenberg with WO 9847824 to Shiota. Here, the Examiner alleges that Rosenberg teaches a purification step of the metal salt based on the fact that titanium is present in a metal salt, albeit for the purpose of purifying the titanium not the metal salt. Shiota was cited to support the contention that metal salt purification inherently occurred during the purification of the Ti of Rosenberg. This rejection is now moot by the

submission of new claim 17 and the combination of the metal salt purification step and the later deoxidation step.

For the rejection of claim 4, which presumably applies to new claim 17, the Examiner cites the Fray patent to conclude that it would be obvious to subject the material produced according to the method of Rosenberg to the deoxidizing method of Fray for the purpose of purifying the titanium. In other words, the Examiner is saying that the Ti purification step of Rosenberg can be followed by another titanium purification step in the form of the deoxidizing step of Fray, which employs the addition of calcium to the salt for improved deoxidation.

The teachings of Rosenberg and Fray, even if combined, still fail to teach the method of claim 17. Claim 17 defines a salt purification step using a first material to produce a purified metal salt and then a titanium deoxidation step using a second material immersed in the purified metal salt. The flaw in the rejection is that the Examiner overlooks the fact that the purified salt is used in the deoxidation step and this is not found in either Rosenberg or Fray.

In the rejection, the Examiner contends that there is inherent salt purification during the Ti purification step of Rosenberg. Even if this is so, the salt bath used in Rosenberg is not taught to be used in a deoxidation step such as taught by Fray.

In the Examiner's reasoning, one of skill in the art would be taught to take the purified titanium of Rosenberg and purify it more using the method of Fray. The method of Fray would not employ the salt bath of Rosenberg. Moreover, in this scenario, the same material used for purification is used for deoxidation, which is contrary to the claimed method, which uses a first material for purification of the salt and a second material to be deoxidized.

Since the claimed steps are not even remotely suggested by the combination of Rosenberg and Fray, a *prima facie* case of obviousness is not established against new claim 17. Shiota does not supply the deficiencies in Rosenberg and Fray so that the Examiner's reliance on this reference is irrelevant from a patentability standpoint.

The features of claim 17 with respect to the control of the volume related to surface area of the first material is also not found in the cited prior art. The Examiner makes the argument that the maximization of the use of sponge material in Rosenberg is the same as the claimed step. This position makes no sense when reading the claim closely. Claim 17 specifically requires that the volume of the metal salt is in relation to the surface area of the first material. Even, *assuming arguendo*, that one of skill in the art would be taught to optimize the use of sponge titanium in Rosenberg, how is this the same as control of the volume of the salt bath with respect to a surface area of the sponge titanium? The Examiner has not provided a factual basis in the prior art to address the method step of controlling the

volume of the salt with respect to the surface area of the first material used to purify the salt bath and the failure in this regard mandates that the rejection be withdrawn. If the Examiner maintains the rejection, the Examiner is called upon to substantiate the basis for maintaining the rejection regarding this method step.

Claim 18 is also patentable for the same reason as set forth above with respect to the control of the volume and area of the first material. No reason exists to conclude that this control is obvious based on the teachings of Rosenberg, Shiota, and Fray.

Claim 19 is patentable based on its dependence on claim 17.

In summary, the cited prior art cannot establish a *prima facie* case of obviousness against claims 17 and 18 for the simple reasons that the processing steps are not disclosed or suggested nor is the control of the volume based on surface area taught. Thus, the rejections based on Rosenberg, Shiota, and Fray must be withdrawn and all pending claims passed onto issuance.

Accordingly, the Examiner is requested to examine this application and pass all pending claims onto issuance.

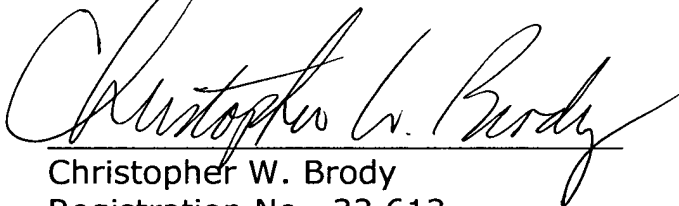
If the Examiner believes that an interview would be helpful in expediting the allowance of this application, the Examiner is requested to telephone the undersigned at 202-835-1753.

The above constitutes a complete response to all issues raised in the Office Action dated February 24, 2009.

Again, reconsideration and allowance of this application is respectfully requested.

A petition for a one month extension of time is made and a check in the amount of \$130.00 is submitted herewith to pay for the petition. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 50-1088.

Respectfully submitted,  
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Docket No.: 12054-0029  
Date: June 22, 2009